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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,537	03/17/2004	Chunlan Qin	TOP 364	2304
23995	7590	04/18/2007	EXAMINER	
RABIN & Berdo, PC 1101 14TH STREET, NW SUITE 500 WASHINGTON, DC 20005			FILE, ERIN M	
			ART UNIT	PAPER NUMBER
			2611	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/18/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/801,537

Applicant(s)

QIN, CHUNLAN

Examiner

Erin M. File

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on 17 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1, 2, 4, 6-8, 10-14, 16 is/are rejected.
- 7) ☐ Claim(s) 3, 5, 9, 15 and 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION*****Drawings***

1. Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to under 37 CFR 1.83(b) because they are incomplete. 37 CFR 1.83(b) reads as follows:

When the invention consists of an improvement on an old machine the drawing must when possible exhibit, in one or more views, the improved portion itself, disconnected from the old structure, and also in another view, so much only of the old structure as will suffice to show the connection of the invention therewith.

3. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the

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remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance. Elements of independent claim 7 are not shown completely in the drawings, specifically there are no drawings illustrating an apparatus for detecting the burst sequence and locating the end of the burst sequence by comparing each of the phase differences with an upper threshold and a lower threshold.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 6, 7, 10, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mobin (U.S. Patent No. 5,748,682) in view of Asahara et al. (U.S. Patent No. 6,353,642).

**Claim 1, 7, Mobin discloses:**

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- calculating phase differences of every two consecutive samples in the received signal (col. 11, lines 53-58, col. 12, lines 2-5);
- detecting the burst sequence (col. 4, lines 54-56)
- estimating a burst frequency of the burst sequence once detecting the burst sequence (col. 4, lines 54-56, col. 12, lines 58-60)

Mobin fails to disclose locating the end of the burst sequence by comparing each of the phase differences with an upper threshold and a lower threshold, however, Asahara discloses locating the end of the burst sequence by comparing each of the phase differences with an upper threshold and a lower threshold (col. 17, line 55-col. 18, line 38). Asahara discloses that this process allows for more accurate frequency compensation in the signal, having the advantage of a more advantage and robust signal (col. 17, line 55-col. 18, line 38). Because of this advantage, it would have been obvious to one skilled in the art to incorporate the frequency burst upper and lower threshold comparison of Asahara into the invention of Mobin.

**Claims 6, 10,** Asahara further discloses adjusting an output frequency of a local oscillator according to the burst frequency, thereby maintaining frequency synchronization (see fig. 12, frequency offset estimating section 21 is sent to controller 56 which adjusts local oscillator 55).

**Claim 13,** Mobin discloses:

- calculating phase differences of every two consecutive samples in the received signal (col. 11, lines 53-58, col. 12, lines 2-5);
- detecting the burst sequence (col. 4, lines 54-56)

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- estimating a burst frequency of the burst sequence once detecting the burst sequence (col. 4, lines 54-56, col. 12, lines 58-60)
- adjusting the local oscillating frequency of the local oscillator according to the frequency of the burst sequence to maintain the synchronization (see fig. 12, frequency offset estimating section 21 is sent to controller 56 which adjusts local oscillator 55)

Mobin fails to disclose locating the end of the burst sequence by comparing each of the phase differences with an upper threshold and a lower threshold, however, Asahara discloses locating the end of the burst sequence by comparing each of the phase differences with an upper threshold and a lower threshold (col. 17, line 55-col. 18, line 38). Asahara discloses that this process allows for more accurate frequency compensation in the signal, having the advantage of a more advantage and robust signal (col. 17, line 55-col. 18, line 38). Because of this advantage, it would have been obvious to one skilled in the art to incorporate the frequency burst upper and lower threshold comparison of Asahara into the invention of Mobin.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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7. Claims 2 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mobin (U.S. Patent No. 5,748,682) and Asahara et al. (U.S. Patent No. 6,353,642) as applied to claims 1 and 7 above, and further in view of Willis (U.S. Patent No. 4,647,968).

**Claims 2, 8, 14**, neither Mobin nor Asahara disclose band-pass filtering the received signal to eliminate noise before calculating the phase differences; and low-pass filtering the phase differences to smooth variations of the phase differences, however, Willis discloses band-pass filtering the received signal to eliminate noise before calculating the phase differences (fig. 2, 26, col. 5, lines 41-42); and low-pass filtering the phase differences to smooth variations of the phase differences (fig. 2, 32, col. 6, lines 49-50). Because using filters for removing noise and variation in a signal has the well known advantage in the art of reducing error in a received signal, it would have been obvious to one skilled in the art at the time of invention to incorporate the bandpass and lowpass filtering of Willis into the combined invention of Mobin and Asahara.

8. Claims 4, 12, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mobin (U.S. Patent No. 5,748,682) and Asahara et al. (U.S. Patent No. 6,353,642) as applied to claims 1, 10, and 13 above, and further in view of Bourzeix (U.S. Patent No. 6,393,071).

**Claim 4, 12, 16**, neither Mobin nor Asahara disclose estimating the burst frequency includes using a linear equation to calculate the frequency of the burst sequence from the upper threshold and the lower threshold, however, Bourzeix,

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discloses estimating the burst frequency includes using a linear equation to calculate the frequency of the burst sequence from the upper threshold and the lower threshold (col. 6, lines 45-46). Because Bourzeix discloses these algorithms have the advantages of both validating the burst frequency and minimizing the probability of falsely identifying the burst frequency (col.7, lines 36-38), it would have been obvious to one skilled in the art at the time of invention to incorporate the linear algorithm as disclosed by Bourzeix into the combined invention of Mobin and Asahara.

9. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Willis (U.S. Patent No. 4,647,968) in view of Asahara et al. (U.S. Patent No. 6,353,642).

Claim 11,

- a band pass filter, receiving and filtering the received signal to eliminate noise (fig. 2, 26, col. 5, lines 41-42);
- a delta-phase calculator, coupling to the band pass filter and calculating phase differences of every two consecutive samples in the received signal (fig. 2, 30, col. 6, line 14);
- a low pass filter, smoothing variations of the phase differences calculated by the delta-phase calculator (fig. 2, 32, col. 6, lines 49-50)

Willis fails to disclose a flat line detector, detecting the burst sequence and locating the end of the burst sequence by comparing each of the phase differences received from the low pass filter with an upper threshold and a lower



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threshold, however, Asahara discloses detecting the burst sequence and locating the end of the burst sequence by comparing each of the phase differences received from the low pass filter with an upper threshold and a lower threshold (col. 17, line 55-col. 18, line 38). Asahara discloses that this process allows for more accurate frequency compensation in the signal, having the advantage of a more advantage and robust signal (col. 17, line 55-col. 18, line 38). Because of this advantage, it would have been obvious to one skilled in the art to incorporate the frequency burst upper and lower threshold comparison of Asahara into the invention of Willis.

***Allowable Subject Matter***

10. Claims 3, 5, 9, 15, 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erin M. File whose telephone number is 5712726040. The examiner can normally be reached on M-F 1-9:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on 5712723024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Erin M. File

EMF

4/9/2007

  
DAVID C. PAYNE  
SUPERVISORY PATENT EXAMINER